Date of Report: 03/17/11
Date Received: 03/10/11
Project: Alaskan Copper 1198001.010.011, F&BI 103128
Date Extracted: 03/10/11
Date Analyzed: 03/11/11

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
CB330001 103128-01	110 x	890	89
Method Blank 01-0425 MB	<50	<250	77

Analysis For Total Metals By EPA Method 200.8

Client ID:	CB330001	Client:	Landau Associates
Date Received:	03/10/11	Project:	Alaskan Copper 1198001.010.011
Date Extracted:	03/15/11	Lab ID:	103128-01
Date Analyzed:	03/15/11	Data File:	103128-01.029
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125

Analyte:	Concentration ug/L (ppb)
Copper	119
Zinc	83.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	CB331707	Client:	Landau Associates
Date Received:	03/10/11	Project:	Alaskan Copper 1198001.010.011
Date Extracted:	03/15/11	Lab ID:	103128-02
Date Analyzed:	03/15/11	Data File:	103128-02.030
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125

Analyte:	Concentration ug/L (ppb)
Copper	32.4
Zinc	295

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Landau Associates
Date Received:	NA	Project:	Alaskan Copper 1198001.010.011
Date Extracted:	03/15/11	Lab ID:	I1-172 mb
Date Analyzed:	03/15/11	Data File:	I1-172 mb.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	101	60	125

Analyte:	Concentration ug/L (ppb)
Copper	<1
Zinc	<1

Date of Report: 03/17/11
Date Received: 03/10/11
Project: Alaskan Copper 1198001.010.011, F&BI 103128

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	82	90	58-134	9

Date of Report: 03/17/11
Date Received: 03/10/11
Project: Alaskan Copper 1198001.010.011, F&BI 103128

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 103103-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper	ug/L (ppb)	20	3.76	121	114	50-144	6
Zinc	ug/L (ppb)	50	53.1	104 b	106 b	46-148	2 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Copper	ug/L (ppb)	20	108	66-134
Zinc	ug/L (ppb)	50	107	57-135

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

AKC-0004483

103128

LANDAU ASSOCIATES

☒ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (503) 542-1080
☐ _____

Please Bill to Alaskan Copper
P.O. M06534

ME 03/10/11

Date 3/10/11
Page 1 of 1

Chain-of-Custody Record

AI 3

Project Name Alaskan Copper Project No. 1198001.010,011
Project Location/Event 1Q11 SW sampling
Sampler's Name Rosemary Trimmer
Project Contact Joe Kalmar/Gary Huitsing/[redacted] Thompson
Send Results To Gary Huitsing/Rosemary Trimmer-Landau
Jerry Thompson-Alaskan Copper

Turnaround Time
☒ Standard
☐ Accelerated
☐ _____

Lab ID	Sample I.D.	Date	Time	Matrix	No. of Containers	Testing Parameters: Total Zinc (EPA 200.8)	Total Copper (EPA 200.8)	TPH (NWTPH-Dx)	Observations/Comments
01AB	CB330001	3/10/11	10:00	H2O	2	X	X	X	
02	CB331707	↓	11:00	↓	1				

Observations/Comments

X Allow water samples to settle, collect aliquot from clear portion

X NWTPH-Dx - run acid wash/silica gel cleanup

___ run samples standardized to _____ product

___ Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
___ non-preserved
___ preserved w/methanol
___ preserved w/sodium bisulfate
___ Freeze upon receipt

___ Dissolved metal water samples field filtered

Other _____

Samples received at 7 °C

Special Shipment/Handling or Storage Requirements on ice

Method of Shipment deliver to lab by RemT

Relinquished by	Received by	Relinquished by	Received by
Signature Rosemary Trimmer	Signature	Signature	Signature
Printed Name Rosemary Trimmer	Printed Name HONG NGUYEN	Printed Name	Printed Name
Company Landau Associates	Company FMT	Company	Company
Date 3/10/11 Time 11:45	Date 3/10/11 Time 11:45	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 8/09

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

March 17, 2011

Joe Kalmer, Project Manager
Landau Associates
130 2nd Ave. S.
Edmonds, WA 98020

Dear Mr. Kalmer:

Included are the results from the testing of material submitted on March 10, 2011 from the Alaskan Copper 1198001.010.011, F&BI 103128 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Gerald Thompson, Gary Huitsing
NAA0317R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 10, 2011 by Friedman & Bruya, Inc. from the Landau Associates Alaskan Copper 1198001.010.011 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Landau Associates
103128-01	CB330001
103128-02	CB331707

All quality control requirements were acceptable.